



Abbreviated Water and Sewer Needs

Sewer Basis of Design

For Self Storage

SWC McDowell / Scottsdale Rd

Scottsdale, AZ

FINAL Basis of Design Report

☐ APPROVED

☒ APPROVED AS NOTED

☐ REVISE AND RESUBMIT



Disclaimer: If approved; the approval is granted under the condition that the final construction documents submitted for city review will match the information herein. Any subsequent changes in the water or sewer design that materially impact design criteria or standards will require re-analysis, re-submittal, and approval of a revised basis of design report prior to the plan review submission.; this approval is not a guarantee of construction document acceptance.
For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY Idillon

DATE 1/25/2021

Job: 523
January 2021

Prepared by:

Steve Bowser, PE
Helix Engineering, LLC
3240 E. Union Hills Dr #112
Phoenix, AZ 85050
602-788-2616
sb@hxeng.com

a. 12ft additional alley
dedication assumed to be
included. Utility plan does not
specifically call out additional
dedication.



EXPIRES 9-30-23

**Sewer Basis of Design
FOR
Self Storage
SWC McDowell / Scottsdale Rd
Scottsdale, Arizona**

A. INTRODUCTION

B. DESIGN DOCUMENTATION

C. EXISTING CONDITIONS

D. PROPOSED CONDITIONS

E. COMPUTATIONS

F. SUMMARY

G. SUPPORTING MAPS / REFERENCES

Figure 1 - Vicinity Map..... 5

Figure 2 - Water/Sewer Map..... 6

C. Introduction

The proposed site is located along on the South side of McDowell Rd west of Scottsdale Rd within the City of Scottsdale, Arizona. The site is situated within the Northeast Quarter of Section 3, Township 1 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site is currently a developed site with offices / retail with a access to McDowell Rd. This project will develop a self storage building on the site.

D. Design Documentation

Project will be analyzed using the design criteria from the DSPM. Sewer demand of 0.4 gal per sf per day for office uses for the approx 3600 SF office. The only area within the project that generates sewer is the office area. Peak factor of 3.0 will be used. Project does not involve high peak uses (such as restaurants, hotels or condos).

C. Existing Conditions

Currently, the site is a developed retail site with an 8" public sewer along the south side of the site. This public line flows east and connects to the network of the city's sewer system.

D. Proposed Conditions

The building will be placed centrally in the site with the office in the northwest corner of the first floor. A single 6" private sewer service will exit the building and connect to the existing public sewer along the south side of the site.

All onsite sewer lines shall be private.

E. Computations

Office Areas: 3600 SF

Average Day Sewer Demand: 0.4 gallons per SF= 1440 gal per day

Peak Factor: 3x

Peak Day Demand: 3x Average Day Sewer Demand = 3 x 1440= 4320 gal per day
(Peak Demand based on conservative 10 hour operational day) = **7 gpm**

Proposed 6" private main at 1.04% slope capacity=**256 GPM** (0.57 CFS)

F. Summary

- This project is the construction of single commercial storage building with a 3600 SF office.
- Office area is the only wastewater generator on the site.
- The project will install a new 6" commercial sewer service connecting to the 8" public main on the south side of the site.

G. Supporting Maps / References

1. City of Scottsdale, Design Standards and Procedures Manual, 2018.
2. QS map 12-44

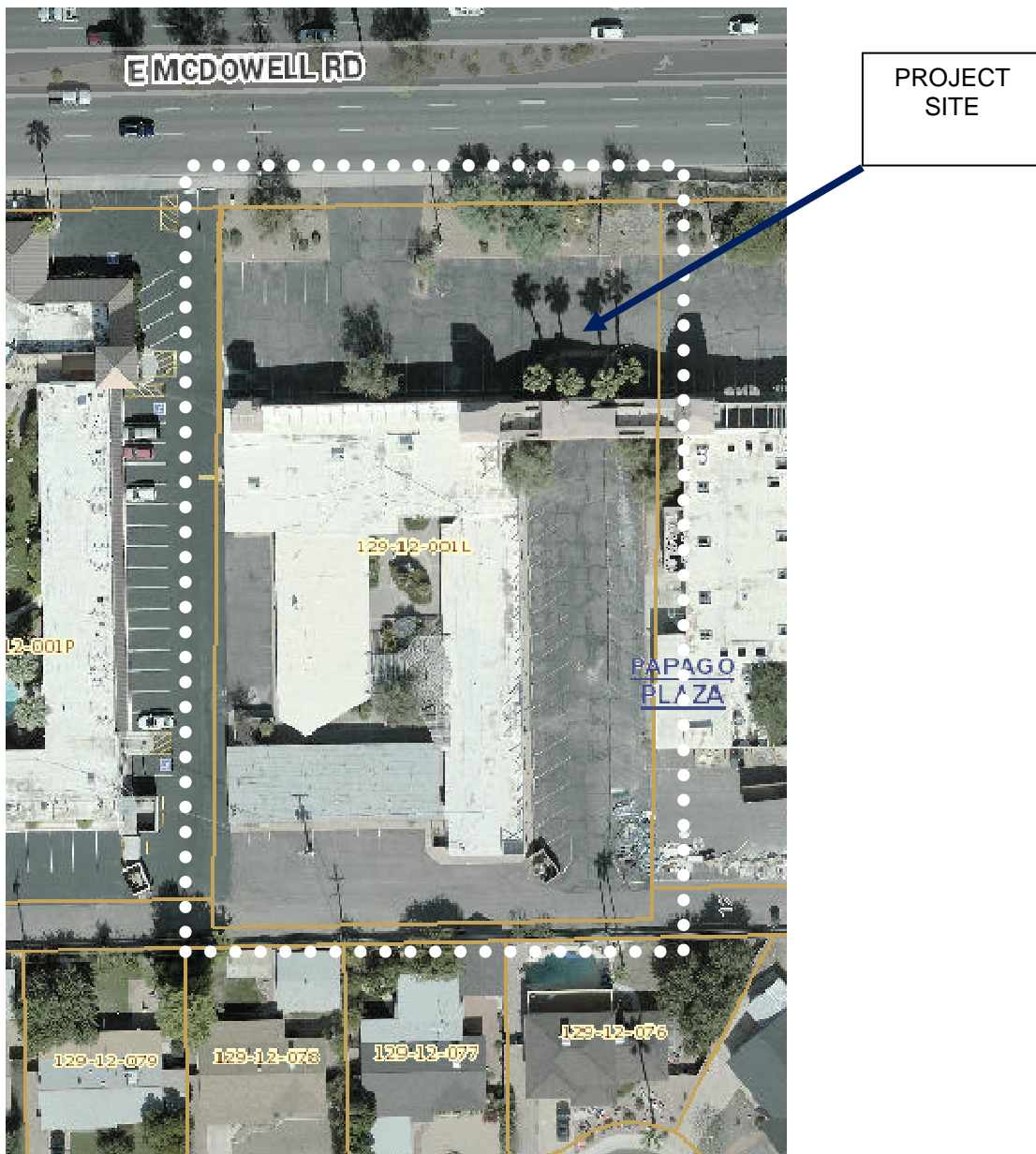
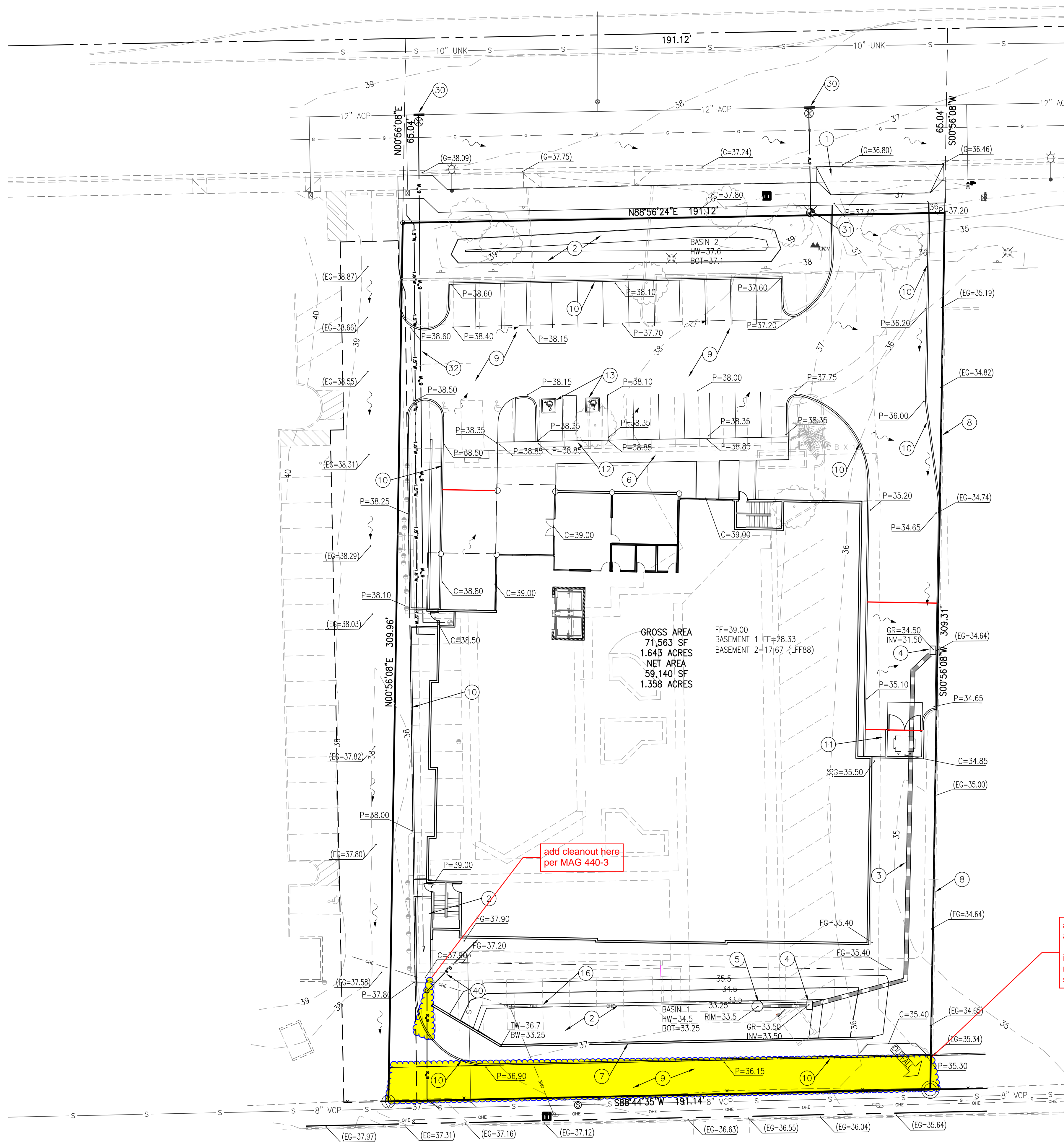


Figure 1-VICINITY MAP



KEYED NOTES

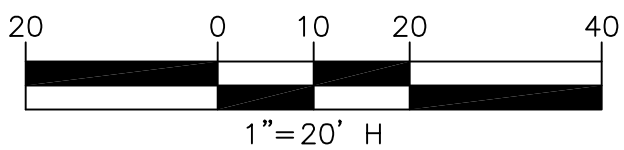
1. CONSTRUCT DRIVEWAY
 2. CONSTRUCT SURFACE BASIN. BASIN SHALL BE MAX 4:1 SLOPE. SCARIFY BOTTOM OF BASIN MIN 12". CONTRACTOR SHALL ACCOUNT FOR FINAL LANDSCAPING AND DG TO ACHIEVE FINAL ELEVATIONS (ELEVATIONS SHALL BE TO TOP OF DG)
 3. INSTALL 18" PIPE. PIPE SHALL BE HDPE TYPE WT IB.
 4. INSTALL INLET PER MAG STD DET 535
 5. INSTALL DRYWELL PER MAXWELL OR APPROVED EQUAL.
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 9. CONSTRUCT ONSITE PAVING.
 10. CONSTRUCT 6" CURB.
 11. CONSTRUCT REFUSE ENCLOSURE PER COS STD DET 2146-1
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 13. PLACE TWO 12"x18" NO PARKING SIGN AND PAINT WHITE STRIPE HATCH AREA SHOWN ON PLAN. HATCH STRIPES SHALL BE 2' APART. PAVE ADA STALL MAX 2% IN ALL DIRECTIONS. SIGN PER COS AND ADA REGULATIONS
 14. SRP TRANSFORMER - SEE SRP PLANS
 15. SITE LIGHTING - SEE ELECTRICAL PLANS
 16. REMOVE / RELOCATE OVERHEAD POWER
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30. INSTALL 12X6 TS&V
 31. INSTALL NEW FIRE HYDRANT
 32. INSTALL 6" FIRELINE
-
40. INSTALL NEW 6" SEWER TAP

LDillon added V4 utility plan
page 1/25/2021

CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL SITEWORK DISCIPLINES, INCLUDING, BUT NOT LIMITED TO, BUILDING, LANDSCAPE, DRY UTILITIES, LIGHTING, LOW VOLTAGE, FUEL SYSTEM, ETC AND COORDINATE ALL WORK APPROPRIATELY.

assumed to be
additional portion of
12ft dedicated alley
in part for
necessary public
sewer line access

add cleanout here
per MAG 440-3



CLIENT:
EAPC

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(602) 441-4505



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BLUE STAKE CENTER

RELEASE

DATE	
XXXX	PRELIM ENGR

REVISIONS

NO.	DATE	
1		
2		
3		

PROJECT NAME

SELF STORAGE

PROJECT ADDRESS

McDowell / Scottsdale Rd
SCOTTSDALE, ARIZONA
85257

PROJECT AREA

HELIX JOB NUMBER

523

SHEET TITLE

IN HOUSE

DRAWN BY: MT

CHECKED BY: SB

Prelim G / D PLAN

SHEET

PAGE

GD-1

1 OF 1

PLOT SCALE: 1:1 @ 24"x36"; 1:2.2 @ 11"x17"

PLAN REVIEW

Water Basis of Design

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Scottsdale, AZ

Job: 523
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BY Idillon

DATE 1/25/2021

1. Water meter appears to be in adjusted sidewalk alignment. Relocate further south. Will need to pay City to relocate meter box. Service line may need to be replaced. If it needs to be replaced it shall be min 1" type K copper tubing.

2. replacement of section of 12" ACP with 12" DIP may be required for fire line and hydrant line installation. Refer to DS&PM 6-1.408 and 6-1.413, D

3. Observation: fire hydrant changed to east side of property with driveway change (change from V2 utility plan).

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B. Design Documentation

Project will be analyzed using the design criteria from the DSPM. Water demand of 0.6 gal per sf per day for office uses for the approx 3600 SF office. The only area within the project that generates water demand is the office area. Peak factor per the DSPM of 2x for the Max Day Demand and 3.5x for the Peak Hr Demand will be used.

Based on 90,400 SF and type IIB construction, fire flow per IFC will be 6500 gpm, with a 75% reduction, a fire flow of 1625 gpm will be required.

C. Existing Conditions

The site is currently a retail site. An existing water meter is located in the NE corner of the site. A 12" ACP water main is present in McDowell Rd.

D. Proposed Conditions

A new fire hydrant is proposed at the main entrance on McDowell Road. This hydrant will be installed directly on the 12" main. A fireline will be installed on the west side of the site directly connecting the 12" main.

This project is in is in city water zone 1 and the property does not abut city water zone 2.

Existing domestic meter will serve domestic and landscape (100% drip landscape)

E. Computations

Office: Average Day Demand: 0.6 gallons per SF= 2160 gal per day

Max Day Demand: 2x Average Day Demand = 2 x 2160= 4320 gal per day

Peak Hour Demand: 3.5x Average Day Demand (use a conservative 10 operational day) = (3.5 x 2160) / 10 hours = 756 gal per hour (13 gpm)

F. SUMMARY

- This project is the construction of one storage building with one office area.
- Site currently has water mains abutting the north side of the site
- Project will construct one new hydrants at the Northeast corner of the site.
- Fire flow (using the 75% reduction) will be 1625 gpm

G. SUPPORTING MAPS / REFERENCES

1. City of Scottsdale, Design Standards and Procedures Manual, 2018.
2. QS Map 12-44

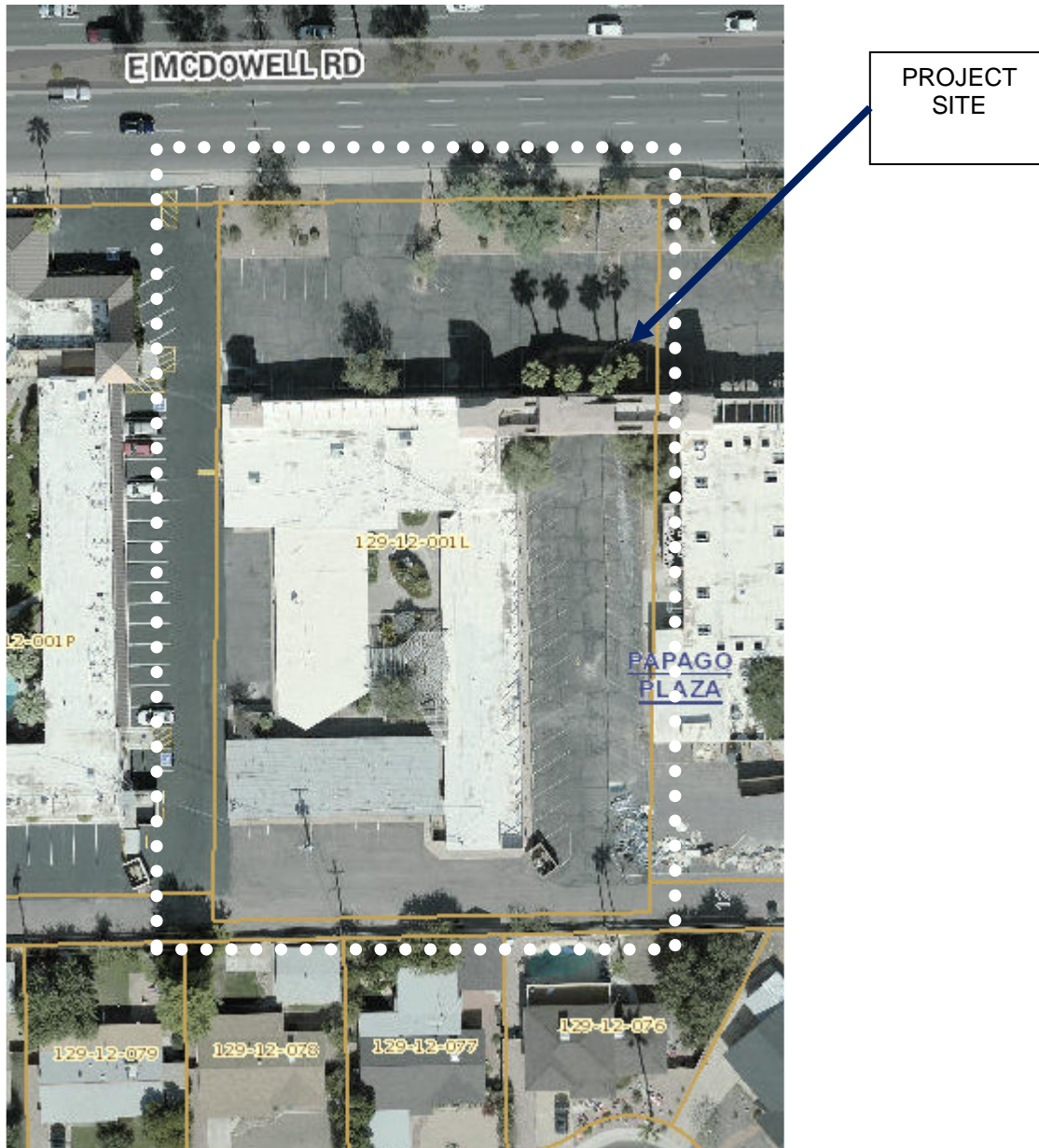


Figure 1-VICINITY MAP

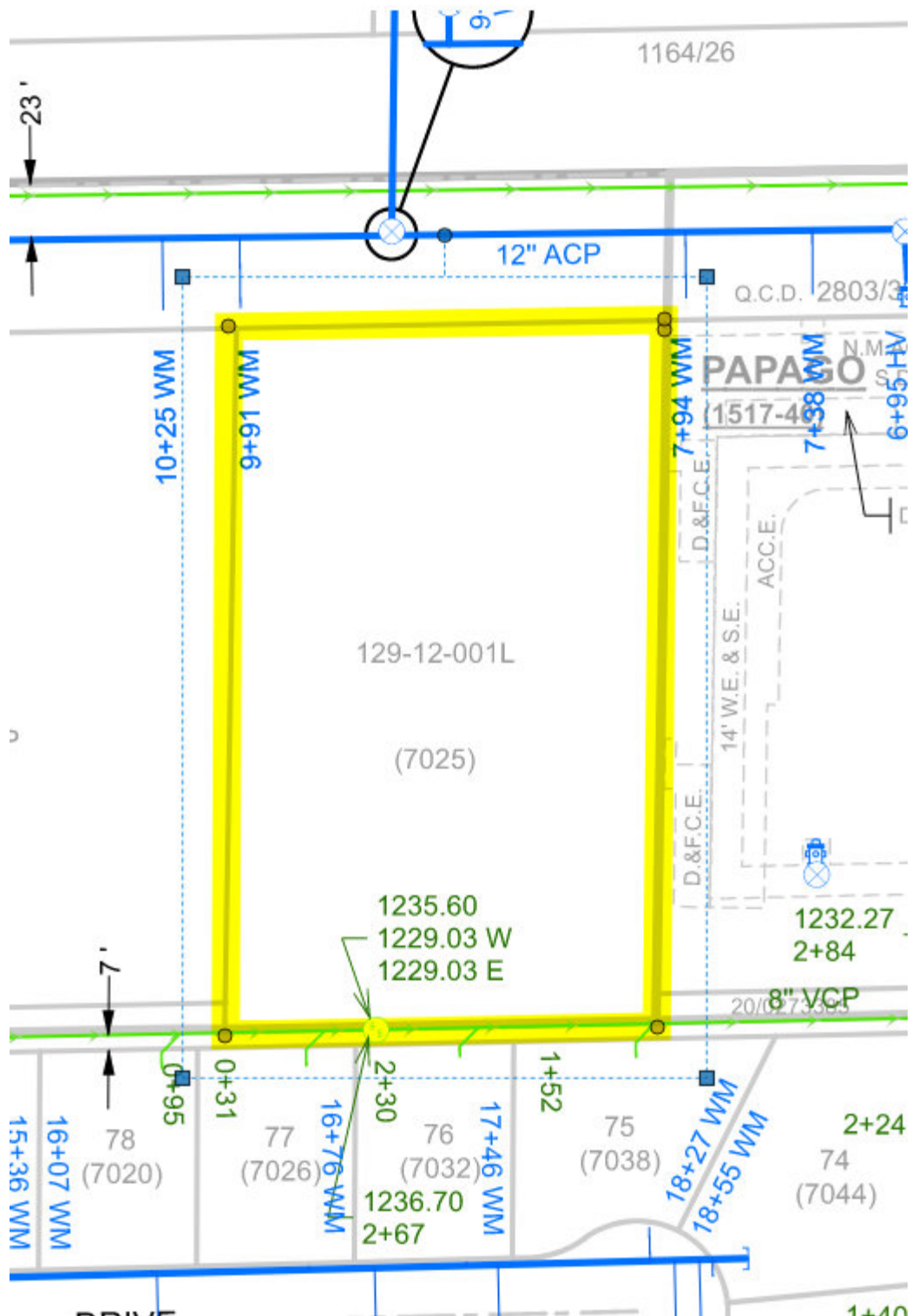
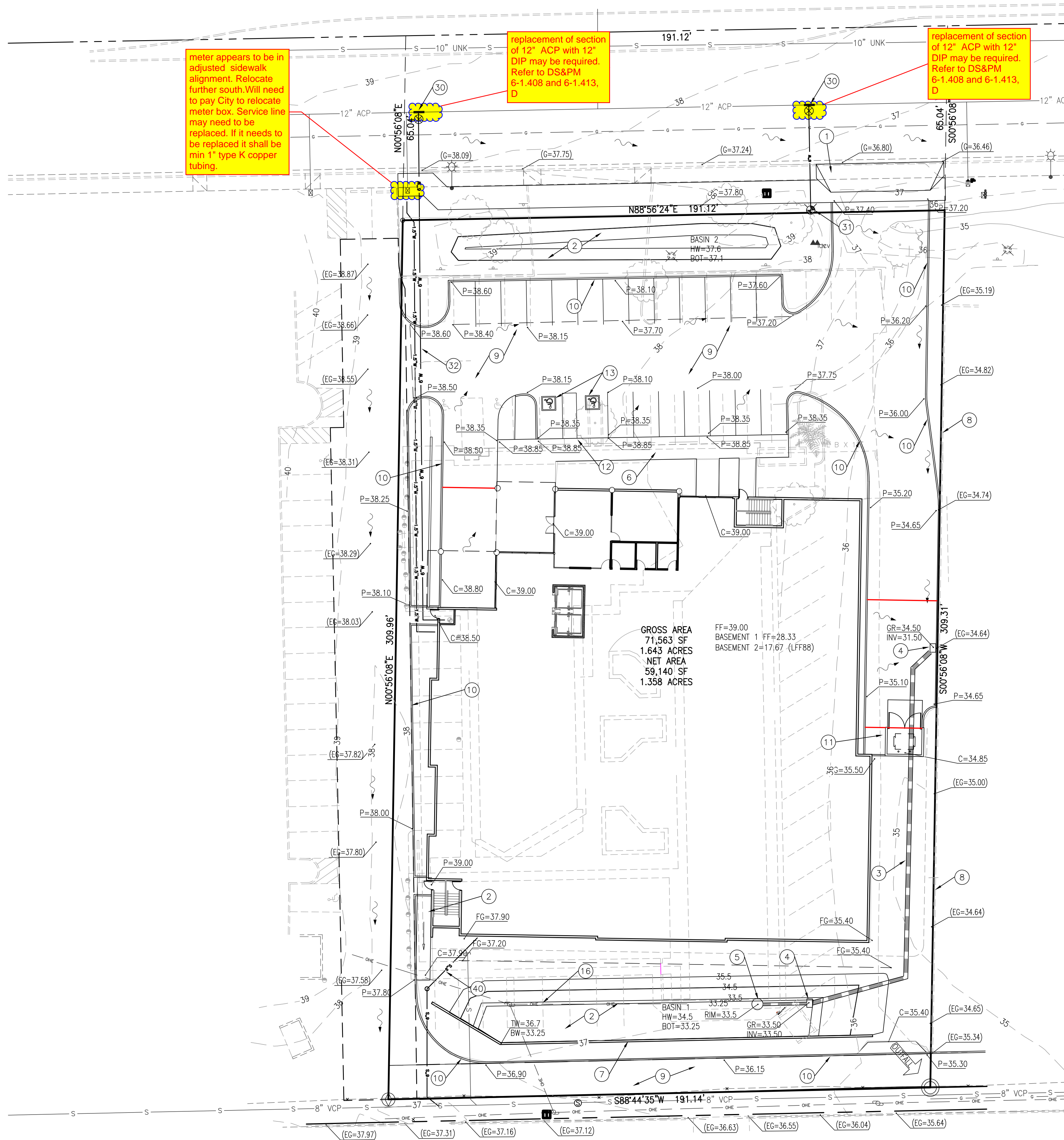


Figure 2-WATER-SEWER QS MAP

Jan 11, 2021 - 8:23am
G:\005\523 McDowell-Scottsdale Storage\DWG\XREF\523 tmp plans.dwg

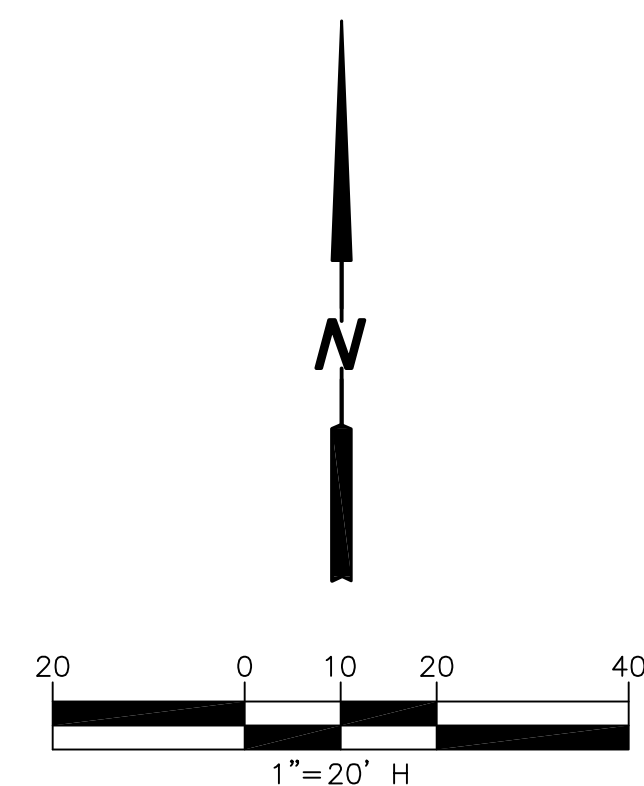


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46-DR-2019
1/14/2021